RECEIVED
MAR 02 2009
STOEL RIVES S.L.C.

PATENT COOPERATION TREATY

From the INTERNATIONAL SEARCHING AUTHORITY

PCT

To:
JOHN R. THOMPSON
STOEL RIVES LLP
201 SO. MAIN STREET, SUITE 1100
ONE UTAH CENTER
SALT LAKE CITY, UT 84111

NOTIFICATION OF TRANSMITTAL OF THE INTERNATIONAL SEARCH REPORT AND THE WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY, OR THE DECLARATION

(PCT Rule 44.1)

	Date of mailing *(day/month/year)*
Applicant's or agent's file reference 36360/1.34	**FOR FURTHER ACTION** See paragraphs 1 and 4 below
International application No. PCT/US 09/31638	International filing date *(day/month/year)* 22 January 2009 (22.01.2009)
Applicant ENSIGN HOLDING, LLC	

1. ☒ The applicant is hereby notified that the international search report and the written opinion of the International Searching Authority have been established and are transmitted herewith.

Filing of amendments and statement under Article 19:
The applicant is entitled, if he so wishes, to amend the claims of the international application (see Rule 46):

When? The time limit for filing such amendments is normally two months from the date of transmittal of the international search report.

Where? Directly to the International Bureau of WIPO, 34 chemin des Colombettes 1211 Geneva 20, Switzerland, Facsimile No.: +41 22 740 14 35

For more detailed instructions, see the notes on the accompanying sheet.

2. ☐ The applicant is hereby notified that no international search report will be established and that the declaration under Article 17(2)(a) to that effect and the written opinion of the International Searching Authority are transmitted herewith.

3. ☐ **With regard to the protest** against payment of (an) additional fee(s) under Rule 40.2, the applicant is notified that:

☐ the protest together with the decision thereon has been transmitted to the International Bureau together with the applicant's request to forward the texts of both the protest and the decision thereon to the designated Offices.

☐ no decision has been made yet on the protest; the applicant will be notified as soon as a decision is made.

4. **Reminders**

Shortly after the expiration of **18 months** from the priority date, the international application will be published by the International Bureau. If the applicant wishes to avoid or postpone publication, a notice of withdrawal of the international application, or of the priority claim, must reach the International Bureau as provided in Rules 90*bis*.1 and 90*bis*.3, respectively, before the completion of the technical preparations for international publication.

The applicant may submit comments on an informal basis on the written opinion of the International Searching Authority to the International Bureau. The International Bureau will send a copy of such comments to all designated Offices unless an international preliminary examination report has been or is to be established. These comments would also be made available to the public but not before the expiration of 30 months from the priority date.

Within **19 months** from the priority date, but only in respect of some designated Offices, a demand for international preliminary examination must be filed if the applicant wishes to postpone the entry into the national phase **until 30 months** from the priority date (in some Offices even later); otherwise, the applicant must, **within 20 months** from the priority date, perform the prescribed acts for entry into the national phase before those designated Offices.

In respect of other designated Offices, the time limit of **30 months** (or later) will apply even if no demand is filed within 19 months.

See the Annex to Form PCT/IB/301 and, for details about the applicable time limits, Office by Office, see the *PCT Applicant's Guide*, Volume II, National Chapters and the WIPO Internet site.

Name and mailing address of the ISA/US Mail Stop PCT, Attn: ISA/US Commissioner for Patents P.O. Box 1450, Alexandria, Virginia 22313-1450 Facsimile No. 571-273-3201	Authorized officer Lee W. Young PCT Helpdesk: 571-272-4300 PCT OSP: 571-272-7774

Form PCT/ISA/220 (January 2004) *(See notes on accompanying sheet)*

PATENT COOPERATION TREATY

From the INTERNATIONAL SEARCHING AUTHORITY

To:
JOHN R. THOMPSON
STOEL RIVES LLP
201 SO. MAIN STREET, SUITE 1100
ONE UTAH CENTER
SALT LAKE CITY, UT 84111

PCT

NOTIFICATION OF TRANSMITTAL OF THE INTERNATIONAL SEARCH REPORT AND THE WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY, OR THE DECLARATION

(PCT Rule 44.1)

	Date of mailing *(day/month/year)* 06 MAR 2009
Applicant's or agent's file reference 36360/1.34	**FOR FURTHER ACTION** See paragraphs 1 and 4 below
International application No. PCT/US 09/31638	International filing date *(day/month/year)* 22 January 2009 (22.01.2009)
Applicant ENSIGN HOLDING, LLC	

1 ☒ The applicant is hereby notified that the international search report and the written opinion of the International Searching Authority have been established and are transmitted herewith.

Filing of amendments and statement under Article 19:
The applicant is entitled, if he so wishes, to amend the claims of the international application (see Rule 46).

When? The time limit for filing such amendments is normally two months from the date of transmittal of the international search report.

Where? Directly to the International Bureau of WIPO, 34 chemin des Colombettes 1211 Geneva 20, Switzerland, Facsimile No.: +41 22 740 14 35

For more detailed instructions, see the notes on the accompanying sheet.

2 ☐ The applicant is hereby notified that no international search report will be established and that the declaration under Article 17(2)(a) to that effect and the written opinion of the International Searching Authority are transmitted herewith.

3 ☐ **With regard to the protest** against payment of (an) additional fee(s) under Rule 40.2, the applicant is notified that:

☐ the protest together with the decision thereon has been transmitted to the International Bureau together with the applicant's request to forward the texts of both the protest and the decision thereon to the designated Offices.

☐ no decision has been made yet on the protest; the applicant will be notified as soon as a decision is made.

4 **Reminders**

Shortly after the expiration of **18 months** from the priority date, the international application will be published by the International Bureau. If the applicant wishes to avoid or postpone publication, a notice of withdrawal of the international application, or of the priority claim, must reach the International Bureau as provided in Rules 90*bis*.1 and 90*bis*.3, respectively, before the completion of the technical preparations for international publication.

The applicant may submit comments on an informal basis on the written opinion of the International Searching Authority to the International Bureau. The International Bureau will send a copy of such comments to all designated Offices unless an international preliminary examination report has been or is to be established. These comments would also be made available to the public but not before the expiration of 30 months from the priority date.

Within **19 months** from the priority date, but only in respect of some designated Offices, a demand for international preliminary examination must be filed if the applicant wishes to postpone the entry into the national phase **until 30 months** from the priority date (in some Offices even later); otherwise, the applicant must, **within 20 months** from the priority date, perform the prescribed acts for entry into the national phase before those designated Offices.

In respect of other designated Offices, the time limit of **30 months** (or later) will apply even if no demand is filed within 19 months.

See the Annex to Form PCT/IB/301 and, for details about the applicable time limits, Office by Office, see the *PCT Applicant's Guide*, Volume II, National Chapters and the WIPO Internet site.

Name and mailing address of the ISA/US Mail Stop PCT, Attn: ISA/US Commissioner for Patents P.O. Box 1450, Alexandria, Virginia 22313-1450 Facsimile No. 571-273-3201	Authorized officer: Lee W. Young PCT Helpdesk: 571-272-4300 PCT OSP: 571-272-7774

Form PCT/ISA/220 (January 2004)

(See notes on accompanying sheet)

PATENT COOPERATION TREATY

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference 36360/1.34	**FOR FURTHER ACTION**	see Form PCT/ISA/220 as well as, where applicable, item 5 below.
International application No. PCT/US 09/31638	International filing date *(day/month/year)* 22 January 2009 (22.01.2009)	(Earliest) Priority Date *(day/month/year)* 17 March 2008 (17.03.2008)
Applicant ENSIGN HOLDING, LLC		

This international search report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This international search report consists of a total of 0 sheets.

☐ It is also accompanied by a copy of each prior art document cited in this report.

1. **Basis of the report**

a. With regard to the **language**, the international search was carried out on the basis of:

☒ the international application in the language in which it was filed.

☐ a translation of the international application into _____ which is the language of a translation furnished for the purposes of international search (Rules 12.3(a) and 23.1(b)).

b. ☐ This international search report has been established taking into account the **rectification of an obvious mistake** authorized by or notified to this Authority under Rule 91 (Rule 43.6*bis*(a)).

c. ☐ With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, see Box No. I.

2. ☐ **Certain claims were found unsearchable** (see Box No. II).

3. ☐ **Unity of invention is lacking** (see Box No. III).

4. With regard to the **title**,

☒ the text is approved as submitted by the applicant.

☐ the text has been established by this Authority to read as follows:

5. With regard to the **abstract**,

☒ the text is approved as submitted by the applicant.

☐ the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box No. IV. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. With regard to the **drawings**,

a. the figure of the **drawings** to be published with the abstract is Figure No. 5

☐ as suggested by the applicant.

☐ as selected by this Authority, because the applicant failed to suggest a figure.

☒ as selected by this Authority, because this figure better characterizes the invention.

b. ☐ none of the figures is to be published with the abstract.

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US 09/31638

A. CLASSIFICATION OF SUBJECT MATTER
IPC(8) - H04K 1/00 (2009.01)
USPC - 713/186
According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
USPC - 713/186

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched
USPC - 713/150, 168, 170, 182, 186, 189, 726/2, 4, 21, 27, 28 -- see search terms below

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
Dialog Classic (Chinese Pat Abstr, Derwent Index, EPFT, French Pat, Jap Abstr, USPFT, WIPO/PCT PFT); Google Scholar
Terms searched: BIOMETRIC, CHRONOLOGICAL, CONFIDENCE LEVEL, CORRELAT, LEVEL, MEASURE, NON-PUBLIC, ORDER, PRIVATE, PROBABILIT, QUALITY, RANGE, RESTRICTED, STATISTIC, TEMPLATE, THRESHOLD, WEIGHT

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 6,681,029 B1 (Rhoads) 20 January 2004 (20.01.2004); entire document, especially: col 7, ln 1-6; col 8, ln 59 to col 9, ln 7; col 9, ln 15-17, 31-33; col 11, ln 1-8; col 12, ln 53-57; col 13, ln 15-19; col 19, ln 20-22; col 23, ln 7-12, 34-38, 41-61; col 35, ln 54-60; col 40, ln 31-36; col 54, ln 10-14; col 58, ln 1-5; col 64, ln 63-67; col 93, ln 22-43	1-28, 32, 34-37
Y		29-31, 33, 38-50
Y	US 7,113,616 B2 (Ito et al.) 26 September 2006 (26.09.2006); entire document, especially: col 8, ln 64 to col 9, ln 11	29-31, 45-50
Y	US 2006/0171571 A1 (Chan et al.) 03 August 2006 (03.08.2006); entire document, especially: para [0022]	33, 38-44

☐ Further documents are listed in the continuation of Box C. ☐

* Special categories of cited documents
"A" document defining the general state of the art which is not considered to be of particular relevance
"E" earlier application or patent but published on or after the international filing date
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
"O" document referring to an oral disclosure, use, exhibition or other means
"P" document published prior to the international filing date but later than the priority date claimed
"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
24 February 2009 (24.02.2009)	06 MAR 2009
Name and mailing address of the ISA/US Mail Stop PCT, Attn: ISA/US, Commissioner for Patents P.O. Box 1450, Alexandria, Virginia 22313-1450 Facsimile No. 571-273-3201	Authorized officer Lee W. Young PCT Helpdesk: 571-272-4300 PCT OSP: 571-272-7774

Form PCT/ISA/210 (second sheet) (April 2007)

PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

To:
JOHN R. THOMPSON
STOEL RIVES LLP
201 SO. MAIN STREET, SUITE 1100
ONE UTAH CENTER
SALT LAKE CITY, UT 84111

PCT

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43*bis*.1)

Date of mailing *(day/month/year)*	06 MAR 2009

Applicant's or agent's file reference	FOR FURTHER ACTION
36360/1.34	See paragraph 2 below

International application No.	International filing date *(day/month/year)*	Priority date *(day/month/year)*
PCT/US 09/31638	22 January 2009 (22.01.2009)	17 March 2008 (17.03.2008)

International Patent Classification (IPC) or both national classification and IPC
IPC(8) - H04K 1/00 (2009.01)
USPC - 713/186

Applicant ENSIGN HOLDING, LLC

1. This opinion contains indications relating to the following items:

- [X] Box No. I Basis of the opinion
- [ ] Box No. II Priority
- [ ] Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- [ ] Box No. IV Lack of unity of invention
- [X] Box No. V Reasoned statement under Rule 43*bis*.1(a)(i) with regard to novelty, inventive step or industrial applicability, citations and explanations supporting such statement
- [ ] Box No. VI Certain documents cited
- [ ] Box No. VII Certain defects in the international application
- [ ] Box No. VIII Certain observations on the international application

2. **FURTHER ACTION**

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1*bis*(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA/US	Date of completion of this opinion	Authorized officer
Mail Stop PCT, Attn: ISA/US Commissioner for Patents P.O. Box 1450, Alexandria, Virginia 22313-1450 Facsimile No. 571-273-3201	25 February 2009 (25.02.2009)	Lee W. Young PCT Helpdesk: 571-272-4300 PCT OSP: 571-272-7774

Form PCT/ISA/237 (cover sheet) (April 2007)

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

International application No.
PCT/US 09/31638

Box No. I Basis of this opinion

1. With regard to the **language**, this opinion has been established on the basis of:

   ☒ the international application in the language in which it was filed

   ☐ a translation of the international application into _____ which is the language of a translation furnished for the purposes of international search (Rules 12.3(a) and 23.1(b)).

2. ☐ This opinion has been established taking into account the **rectification of an obvious mistake** authorized by or notified to this Authority under Rule 91 (Rule 43*bis*.1(a)).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, this opinion has been established on the basis of:

   a. type of material

      ☐ a sequence listing

      ☐ table(s) related to the sequence listing

   b. format of material

      ☐ on paper

      ☐ in electronic form

   c. time of filing/furnishing

      ☐ contained in the international application as filed

      ☐ filed together with the international application in electronic form

      ☐ furnished subsequently to this Authority for the purposes of search

4. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table(s) relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.

5. Additional comments:

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

International application No.
PCT/US 09/31638

Box No. V **Reasoned statement under Rule 43*bis*.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

1 Statement

Novelty (N)	Claims	29-31, 33, 38-50	YES
	Claims	1-28, 32, 34-37	NO
Inventive step (IS)	Claims	None.	YES
	Claims	1-50	NO
Industrial applicability (IA)	Claims	1-50	YES
	Claims	None.	NO

2 Citations and explanations:
Claims 1-28, 32, and 34-37 lack novelty under PCT Article 33(2) as being anticipated by US 6,681,029 B1 (Rhoads).

Regarding claim 1, Rhoads discloses a method of authentication (col 19, ln 20-22), the method comprising: obtaining from a user a plurality of first measurements corresponding to a first biometric parameter (col 12, ln 53-57; col 64, ln 63-67), wherein at least some of the first measurements are obtained at different times (col 11, ln 1-8); obtaining from the user a plurality of second measurements corresponding to a second biometric parameter (col 12, ln 53-57; col 64, ln 63-67), wherein at least some of the second measurements are obtained at different times (col 11, ln 1-8); analyzing the plurality of first measurements to obtain a first correlation value (col 9, ln 15-17); analyzing the plurality of second measurements to obtain a second correlation value (col 9, ln 15-17); combining the first and second measurements into a first composite dataset in which the first measurements are weighted according to the first correlation value and the second measurements are weighted according to the second correlation value (col 13, ln 15-19); obtaining a first test measurement corresponding to the first biometric parameter (col 7, ln 1-6; col 64, ln 63-67); obtaining a second test measurement corresponding to the second biometric parameter (col 7, ln 1-6; col 64, ln 63-67); and providing a confidence level of user authentication based on a comparison of the first and second test measurements with the first composite dataset (col 8, ln 59 to col 9, ln 7; col 23, ln 7-12, 34-38).

Regarding claim 2, Rhoads discloses the method of claim 1 as applied above. Rhoads further discloses further comprising granting the user access to a first restricted destination if the confidence level is above a first threshold value (col 23, ln 34-38; col 35, ln 54-60; col 40, ln 31-36).

Regarding claim 3, Rhoads discloses the method of claim 2 as applied above. Rhoads further discloses further comprising denying the user access to a second restricted destination if the confidence level is above the first threshold value and below a second threshold value (col 23, ln 34-38; col 35, ln 54-60; col 40, ln 31-36).

Regarding claim 4, Rhoads discloses the method of claim 1 as applied above. Rhoads further discloses further comprising supplementing the plurality of first measurements with the first test measurement if the confidence level is above a first threshold value (col 7, ln 1-6; col 40, ln 31-36).

Regarding claim 5, Rhoads discloses the method of claim 4 as applied above. Rhoads further discloses further compnsing augmenting the plurality of second measurements with the second test measurement if the confidence level is above the first threshold value (col 7, ln 1-6, col 40, ln 31-36).

Regarding claim 6, Rhoads discloses the method of claim 4 as applied above. Rhoads further discloses further comprising withholding the second test measurement from augmenting the plurality of second measurements if the confidence level is above the first threshold value and below a second threshold value (col 23, ln 41-61; col 40, ln 31-36).

Regarding claim 7, Rhoads discloses the method of claim 1 as applied above. Rhoads further discloses further comprising: analyzing the first test measurement in combination with the plurality of first measurements to obtain a third correlation value (col 9, ln 31-33); and supplementing the plurality of first measurements with the first test measurement if the confidence level is above a threshold value and the third correlation value is within a predetermined range (col 7, ln 1-6; col 40, ln 31-36).

Regarding claim 8, Rhoads discloses the method of claim 7 as applied above. Rhoads further discloses further comprising withholding the first test measurement from supplementing the plurality of second measurements if the confidence level is above the threshold value and the third correlation value is outside the predetermined range (col 23, ln 41-61; col 40, ln 31-36).

Regarding claim 9, Rhoads discloses the method of claim 1 as applied above. Rhoads further discloses wherein said analyzing of the plurality of first measurements comprises weighting the first measurements according to the chronological order in which the first measurements were obtained such that a newer measurement is weighted more heavily than an older measurement (col 58, ln 1-5).

--continued in Supplemental Box--

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

International application No.

PCT/US 09/31638

Supplemental Box

In case the space in any of the preceding boxes is not sufficient.

Continuation of:
Box No. V.2. Citations and explanations:

Regarding claim 10, Rhoads discloses the method of claim 9 as applied above. Rhoads further discloses wherein said analyzing of the plurality of second measurements comprises weighting the second measurements according to the chronological order in which the second measurements were obtained such that a newer measurement is weighted more heavily than an oldor measurement (col 58, ln 1-5).

Regarding claim 11, Rhoads discloses the method of claim 1 as applied above. Rhoads further discloses wherein said comparison of the first and second test measurements with the first composite dalaset comprises: combining a weighted version of the first and second test measurements into a second composite dataset, wherein weighting of the first test measurement is based on the first correlation value and weighting of the second test measurement is based on the second composite dataset; and comparing the second composite dateset with the first composite dataset (col 13, ln 15-19).

Regarding claim 12, Rhoads discloses the method of claim 1, wherein said obtaining from a user a plurality of first measurements includes enrolling the user with respect to the first biometric parameter and said obtaining from a user a plurality of second measurements includes enrolling the user with respect to the second biometric parameter (col 54, ln 10-14; col 64, ln 63-67).

Regarding claim 13, Rhoads discloses a method of authentication, the method comprising: obtaining from a user a plurality of first measurements corresponding to a first biometric parameter (col 12, ln 53-57; col 64, ln 63-67), wherein at least some of the first measurements are obtained at different times (col 11, ln 1-8); obtaining from the user a plurality of second measurements corresponding to a second biometric parameter (col 12, ln 53-57; col 64, ln 63-67), wherein at least some of the second measurements are obtained at diiferent times (col 11, ln 1-8); obtaining a first test measurement corresponding to the first biometric parameter (col 7, in 1-6; col 64, ln 63-67); obtaining a second test measurement corresponding to the second biometric parameter (col 7, ln 1-6; col 64, ln 63-67); analyzing a combination of the plurality of first measurements and the first test measurement to obtain a first correlation value (col 9, ln 15-17); analyzing a combination of the plurality of second measurements and the second test measurement to obtain a second correlation value (col 9, ln 15-17); and combining a weighted version of the first and second test measurements into a composite dataset, wherein weighting of the first test measurement is based on the first correlation value and weighting of the second test measurement is based on the second correlation value (col 13, ln 15-19); and comparing the composite dataset with a combination of the plurality of first measurements and the plurality of second measurements to determine a confidence level of user authentication (col 8, ln 59 to col 9, ln 7; col 23, ln 7-12, 34-38).

Regarding claim 14, Rhoads discloses the method of claim 13 as applied above. Rhoads further discloses further comprising granting the user access to a restricted destination if the confidence level is above a threshold value (col 23, ln 34-38; col 35, ln 54-60; col 40, in 31-36).

Regarding claim 15, Rhoads discloses the method of claim 13 as applied above. Rhoads further discloses further comprising supplementing the plurality of first measurements with the first test measurement and supplementing the plurality of second measurements with the second test measurement if the confidence level is above a threshold value (col 7, ln 1-6; col 40, in 31-36).

Regarding claim 16, Rhoads discloses the method of claim 13 as applied above. Rhoads further discloses further comprising: comparing the first correlation value with a predetermined range, and supplementing the plurality of first measurements with the first test measurement if the first correlation value is within the predetermined range (col 23, ln 34-38; col 35, ln 54-60) and if the confidence level is above a threshold value (col 7, ln 1-6; col 40, in 31-36).

Regarding claim 17, Rhoads discloses the method of claim 13 as applied above. Rhoads further discloses wherein said analyzing a combination of the plurality of first measurements and the first test measurement to obtain the first correlation value comprises weighting the first measurements and the first test measurement according to the chronological order in which said measurements were obtained such that a newer measurement is weighted more heavily than an older measurement (col 58, ln 1-5), and wherein said analyzing a combination of the plurality of second measurements and the second test measurement to obtain the second correlation value comprises weighting the second measurements and the second test measurement according to the chronological order in which said measurements were obtained such that a newor measurement is weighted more heavily than an older measurement (col 58, ln 1-5).

Regarding claim 18, Rhoads discloses the method of claim 13 as applied above. Rhoads further discloses wherein said combination of the plurality of first measurements and the plurality of second measurements is obtained by weighting the plurality of first measurements according to the first correlation value and weighting the plurality of second measurements according to the second correlation value (col 13, ln 15-19).

Regarding claim 19, Rhoads discloses a method of authentication, the method comprising: obtaining from a user a first comparison dataset comprising a plurality of first measurements of a first biometric parameter (col 12, ln 53-57; col 64, ln 63-67), wherein each first measurement is associated with a time at which the measurement was obteined (col 11, ln 1-8); obtaining from the user a second comparison dataset comprising a plurality of second measurements of a second biometric parameter (col 12, ln 53-57; col 64, ln 63-67), wherein each second measurement is associated with a time at which the measurement was obtained (col 11, ln 1-8); obtaining a first test dataset comprising a first test measurement associated with a first test time (col 7, ln 1-6, col 11, ln 1-8, col 64, ln 63-67); obtaining a second test dataset comprising a second test measurement associated with a second test time (col 7, ln 1-6; col 11, ln 1-8, col 64, ln 63-67); combining the first and second comparison datasets into a composite dataset (col 8, ln 59 to col 9, ln 7); and comparing the first and second test datasets with the composite dataset to provide a confidence level of user authentication (col 23, in 7-12, 34-38).

Regarding claim 20, Rhoads discloses the method of claim 19 as applied above. Rhoads further discloses further comprising updating the first comparison dataset to include the first test dataset and updating the second comparison dataset to include the second test dataset if the confidence level is above a threshold value (col 7, ln 1-6; col 40, in 31-36).

--continued in Supplemental Box--

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

International application No. PCT/US 09/31638

Supplemental Box

In case **the space in any of the preceding boxes is not sufficient.**

Continuation of:
Box No. V.2: Citations and explanations:

Regarding claim 21, Rhoads discloses the method of claim 19 as applied above. Rhoads further discloses wherein combining the first and second comparison datasets into a composite dataset comprises: analyzing at least the first comparison dataset to obtain a first correlation value (col 9, ln 15-17); analyzing at least the second comparison dataset to obtain a second correlation value (col 9, ln 15-17); weighting at least the first comparison dataset based on the first correlation value (col 58, ln 1-5); and weighting at least the second comparison dataset based on the second correlation value (col 58, ln 1-5).

Regarding claim 22, Rhoads discloses the method of claim 21 as applied above. Rhoads further discloses wherein said analyzing at least the first comparison dataset comprises weighting the first measurements according to the chronological order in which said measurements were obtained such that a newer measurement is weighted more heavily than an older measurement (col 58, ln 1-5), and said analyzing at least the second comparison dataset comprises weighting the second measurements according to the chronological order in which said measurements were obtained such that a newer measurement is weighted more heavily than an older measurement (col 58, ln 1-5).

Regarding claim 23, Rhoads discloses the method of claim 21 as applied above. Rhoads further discloses wherein said analyzing at least the first comparison dataset to obtain the first correlation value further includes analyzing the first test dataset in combination with the first comparison dataset (col 9, ln 31-33), and said analyzing at least the second comparison dataset to obtain the second correlation value further includes analyzing the second test dataset in combination with the second comparison dataset (col 9, ln 31-33).

Regarding claim 24, Rhoads discloses a method of authentication as applied above. Rhoads further discloses the method comprising: obtaining from a user a plurality of first measurements of a first biometric parameter (col 12, ln 53-57; col 64, ln 63-67), wherein at least some of the first measurements are obtained at different times (col 11, ln 1-8); obtaining from the user a plurality of second measurements of a second biometric parameter (col 12, ln 53-57; col 64, ln 63-67), wherein at least some of the second measurements are obtained at different times (col 11, ln 1-8); combining the first and second plurality of measurements into a composite dataset in which measurements obtained during a later timeframe are allorded greater weight than measurements obtained during an earlier timeframe (col 58, ln 1-5); obtaining a first test measurement of the first biometric parameter (col 7, ln 1-6; col 64, ln 63-67); obtaining a second test measurement of the second biometric parameter (col 7, ln 1-6; col 64, ln 63-67); comparing the first and second test measurements with the composite dataset; and providing a confidence level of user authentication based on the comparison of the first and second test measurements with the composite dataset (col 8, ln 59 to col 9, ln 7, col 23, ln 7-12, 34-38).

Regarding claim 25, Rhoads discloses the method of claim 24 as applied above. Rhoads further discloses further comprising supplementing the plurality of first measurements with the first test measurement and supplementing the plurality of second measurements with the second test measurement if the confidence level is above a threshold value (col 23, ln 34-38; col 35, ln 54-60; col 40, ln 31-36).

Regarding claim 26, Rhoads disclosos the method of claim 24 as applied above. Rhoads further discloses wherein statistical analysis of the plurality of first measurements yields a first value and statistical analysis of the plurality of second measurements yields a second value that is smaller than the first value (col 14, ln 9-12, col 39, ln 59-64), and wherein comparing the first and second test measurements with the composite dataset comprises combining the first and second test measurements into a composite test dataset in which the first test measurement is allorded less weight than is the second test measurement (col 39, ln 59-64).

Regarding claim 27, Rhoads discloses a method for authenticating a user (col 19, ln 20-22), the method comprising: obtaining from the user a first measurement of a first biometric parameter (col 12, ln 53-57, col 64, ln 63-67) and a first measurement of a second biometric parameter (col 12, ln 53-57, col 64, ln 63-67) within a first period of time (col 11, ln 1-8), wherein the first biometric parameter is different from the second biometric parameter (col 10, ln 41); obtaining from the user a second measurement of the first biometric parameter (col 12, ln 53-57, col 64, ln 63-67) and a second measurement of the second biometric parameter (col 12, ln 53-57, col 64, ln 63-67) within a second period of time that is subsequent to the first period of time (col 11, ln 1-8), obtaining a third measurement of the first biometric parameter and a third measurement of the second biometric parameter (col 12, ln 53-57, col 64, ln 63-67) within a third period of time that is subsequent to the second period of time (col 11, ln 1-8), comparing the third measurements with a weighted combination of the first measurements and second measurements (col 13, ln 15-19), wherein the second measurements are more heavily weighted than the first measurements (col 58, ln 1-5); and providing a confidence level of user authentication, wherein the confidence level is based on comparing the third measurements with the weighted combination of the first measurements and second measurements (col 8, ln 59 to col 9, ln 7, col 23, ln 7-12, 34-38).

Regarding claim 28, Rhoads discloses the method of claim 27 as applied above. Rhoads further discloses further comprising granting the user access to a restricted destination if the confidence level is above a threshold value (col 23, ln 34-38; col 35, ln 54-60; col 40, ln 31-36).

Regarding claim 32, Rhoads discloses the method of claim 27 as applied above. Rhoads further discloses wherein the third measurement of the first biometric parameter and the third measurement of the second biometric parameter are combined into a weighted combination that is compared with the weighted combination of the first measurements and second measurements (col 13, ln 15-19).

Regarding claim 34, Rhoads discloses the method of claim 32 as applied above. Rhoads further discloses wherein the third measurement of the first biometric parameter is weighted according to a degree of agreement between the first and second measurements of the first biometric parameter (col 13, ln 15-19).

Regarding claim 35, Rhoads discloses the method of claim 32 as applied above. Rhoads further discloses wherein the first biometric parameter is more likely to uniquely identify an individual than is the second biometric parameter, and wherein the first, second, and third measurements of the first biometric parameter are more heavily weighted than the first, second, and third measurements of the second biometric parameter, respectively (col 58, ln 1-5).

--continued in Supplemental Box--

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

International application No.
PCT/US 09/31638

Supplemental Box

In case **the space in any of the preceding boxes is not sufficient.**
Continuation of:
Box No. V.2 Citations and explanations:

Regarding claim 36, Rhoads discloses the method of claim 27 as applied above. Rhoads further discloses wherein each of the first biometric parameter and second biometric parameter is selected from the group consisting of fingerprints, facial scans, retinal scans, iris scans, voice signatures, cardiac cycle signatures, and vein thermal profiles (col 34, ln 27; col 64, ln 60-67; col 69, ln 37-38).

Regarding claim 37, Rhoads discloses a system for authenticating a user (col 19, ln 20-22), the system comprising: a first device configured to obtain one or more measurements of a first biometric parameter (col 12, ln 53-57; col 64, ln 63-67); a second device configured to obtain one or more measurements of e second biometric parameter that is different from the first biometric paremeter (col 12, ln 53-57; col 64, ln 63-67); one or more storage devices configured to store (col 19, ln 35): a first measurement of the first biometric peramater and a first measurement of the second biometric parameter that are obtained within a first time period (col 11, ln 1-8; col 12, ln 53-57; col 64, ln 63-67); and a second measurement of the first biometric parameter and a second measurement of the second biometric parameter that are obtained within a second time period subsequent to the first time period (col 11, ln 1-8; col 12, ln 53-57; col 64, ln 63-67), and one or more processors (col 19, ln 9) configured to: combine the first measurements and the second measurements into a weighted combination (col 13, ln 15-19), with the second measurements being weighted greater than the first measurements (col 58, ln 1-5), compare a third measurement of the first biometric parameter obtained via the first device within a third period of time and a third measurement of the second biometric parameter obtained via the second device within the third period of time with the weighted combination of the first measurements and second measurements (col 13, ln 15-19), wherein the third period of time is subsequent to the second period of time (col 11, ln 1-8); and provide a confidence level of user authentication, wherein the confidence level is based on the weighted combination of the first measurements and second measurements (col 8, ln 59 to col 9, ln 7; col 23, ln 7-12, 34-38).

Claims 29-31, and 45-50 lack an inventive step under PCT Article 33(3) as being obvious over Rhoads in view of US 7,113,616 B2 to Ito et al. (hereinafter "Ito").

Regarding claim 29, Rhoads discloses the method of claim 27 as applied above. Rhoads further discloses further comprising if the confidence level is above a threshold value (col 23, ln 34-38; col 40, ln 31-36). However, Rhoeds does not explicitly disclose updating a template based on the third measurements if the confidence level is above a threshold value. However, Ito does disclose further comprising updating a template based on the third measurements if the confidence level is above a threshold value (col 8, ln 64 to col 9, ln 11). It would have been obvious to one having ordinary skill in the art to add Ito's disclosure of updating a template based on the third measurements if the confidence level is above a threshold value to Rhoads' disclosure of the method of claim 27 further comprising if the confidence level is above a threshold value to provide the method with positive feedback.

Regarding claim 30, Rhoads and Ito teach the method of claim 29 as applied above. Rhoads further discloses further comprising: obtaining a fourth measurement of the first biometric parameter and a fourth measurement of the second biometric parameter (col 12, ln 53-57; col 64, ln 63-67) within a fourth period of time (col 11, ln 1-8); and comparing the fourth measurements with a weighted combination of at least the second measurements and the third measurements (col 13, ln 15-19), wherein the third measurements are more heavily weighted than the second measurements (col 58, ln 1-5).

Regarding claim 31, Rhoads and Ito teach the method of claim 30 as applied above. Rhoads further discloses wherein the fourth measurements are compared with a weighted combination of the first measurements, the second measurements, and the third measurements (col 13, ln 15-19), wherein the third measurements are more heavily weighted than the second measurements and the second measurements are more heavily weighted than the first measurements (col 58, ln 1-5).

Regarding claim 45, Rhoads discloses a method of authentication (col 19, ln 20-22), the method comprising: comprising a first set of information regarding a first biometric parameter (col 12, ln 53-57; col 64, ln 63-67) and a second set of information regarding a second biometric parameter (col 12, ln 53-57; col 64, ln 63-67), authenticating a user one or more times (col 19, ln 20-22); altering a first fusion parameter regarding the first set of information as a result of authenticating the user one or more times (col 93, ln 22-43), altering a second fusion parameter regarding the second set of information as a result of authenticating the user one or more times (col 93, ln 22-43); obtaining a third set of information regarding the first biometric parameter (col 12, ln 53-57; col 64, ln 63-67), obtaining a fourth set of information regarding the second biometric parameter (col 12, ln 53-57; col 64, ln 63-67); comparing the third and fourth sets of information with a weighted version, wherein the first set of information is weighted according to the first fusion parameter and the second set of information is weighted according to the second fusion parameter in the weighted (col 13, ln 15-19), and providing a confidence level of user authentication based on said comparing of the third and fourth sets of information with the weighted version of the template (col 8, ln 59 to col 9, ln 7; col 23, ln 7-12, 34-38). However, Rhoeds does not explicitly disclose providing a template comprising a first set of information regarding a first biometric parameter and a second set of information regarding a second biometric parameter. However, Ito does disclose providing a template comprising a first set of information regarding a first biometric parameter and a second set of information regarding a second biometric parameter (col 8, ln 64 to col 9, ln 11). It would have been obvious to one having ordinary skill in the art to add Ito's disclosure of providing a template comprising a first set of information regarding a first biometric parameter and a second set of information regarding a second biometric parameter to Rhoads' disclosure of a method of authentication, the method comprising: comprising a first set of information regarding a first biometric parameter and a second set of information regarding a second biometric parameter; authenticating a user one or more times; altering a first fusion parameter regarding the first set of information as a result of authenticating the user one or more times; altering a second fusion parameter regarding the second set of information as a result of authenticating the user one or more times; obtaining a third set of information regarding the first biometric parameter; obtaining a fourth set of information regarding the second biometric parameter; comparing the third and fourth sets of information with a weighted version, wherein the first set of information is weighted according to the first fusion parameter and the second set of information is weighted according to the second fusion parameter in the weighted; and providing a confidence level of user authentication based on said comparing of the third and fourth sets of information with the weighted version of the template to provide a predeveloped format for comparing the sets of information.

--continued in Supplemental Box--

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

International application No
PCT/US 09/31638

Supplemental Box

In case **the space in any of the preceding boxes is not sufficient.**

Continuation of:
Box No. V.2 Citations and explanations:

Regarding claim 46, Rhoads and Ito teach the method of claim 45 as applied above. Rhoads further discloses further comprising altering the first fusion parameter based on the third set of information and altering the second fusion parameter based on the fourth set of information if the confidence level is sufficient to identify the test subject as the user (col 93, ln 22-43).

Regarding claim 47, Rhoads discloses a method of authenticating a user (col 19, ln 20-22), the method comprising: a plurality of first measurements obtained from a user, the plurality of first measurements being of a first biometric parameter (col 12, ln 53-57; col 64, ln 63-67); obtaining a test measurement of the first biometric parameter (col 7, ln 1-6; col 64, ln 63-67); comparing the test measurement of the first biometric parameter with the template to obtain a confidence level of user authentication (col 8, ln 59 to col 9, ln 7; col 23, ln 7-12, 34-36); granting the user access to a first restricted destination if the confidence level is above a first threshold value (col 23, ln 34-36; col 35, ln 54-60; col 40, ln 31-36); and denying the user access to a second restricted destination if the confidence level is below a second threshold value (col 23, ln 34-36; col 35, ln 54-60; col 40, ln 31-36). However, Rhoads does not explicitly disclose providing a template However, Ito does disclose providing a template (col 8, ln 64 to col 9, ln 11). It would have been obvious to one having ordinary skill in the art to add Ito's disclosure of providing a template to Rhoads' disclosure of a method of authenticating a user, the method comprising: a plurality of first measurements obtained from a user, the plurality of first measurements being of a first biometric parameter; obtaining a test measurement of the first biometric parameter; comparing the test measurement of the first biometric parameter with the template to obtain a confidence level of user authentication; granting the user access to a first restricted destination if the confidence level is above a first threshold value; and denying the user access to a second restricted destination if the confidence level is below a second threshold value to provide a predeveloped format for comparing the sets of information.

Regarding claim 48, Rhoads and Ito teach the method of claim 47 as applied above. Rhoads further discloses further comprising granting the user access to the second restricted destination if the confidence level is above the second threshold value (col 23, ln 34-36; col 35, ln 54-60; col 40, ln 31-36) and denying the user access to a third restricted destination if the confidence level is below a third threshold value (col 23, ln 34-36; col 35, ln 54-60; col 40, ln 31-36).

Regarding claim 49, Rhoads and Ito teach the method of claim 47 as applied above. Rhoads further discloses wherein the template further compnses a plurality of second measurements obtained from the user, the plurality of second measurements being of a second biometric parameter (col 12, ln 53-57; col 64, ln 63-67), and wherein the method further comprises: obtaining a test measurement of the second biometric parameter (col 7, ln 1-6; col 64, ln 63-67); and comparing the test measurement of the second biometric parameter with the template to obtain the confidence level of user authentication (col 8, ln 59 to col 9, ln 7; col 23, ln 7-12, 34-38).

Regarding claim 50, Rhoads and Ito teach the method of claim 49 as applied above. Rhoads further discloses wherein the first restricted destination compnses one of a secured physical location, vehicle, Internet site, intranet site, computer program, and hardware component (col 35, ln 54-60).

Claims 33, and 38-44 lack an inventive step under PCT Article 33(3) as being obvious over Rhoads in view of US 2006/0171571 A1 to Chan et al. (hereinafter "Chan").

Regarding claim 33, Rhoads discloses the method of claim 32 as applied above. Rhoads further discloses wherein weighting of the third measurement of the first biometric parameter is further based on the first value and weighting of the third measurement of the second biometric parameter is further based on the second value (col 13, ln 15-19). However, Rhoads does not explicitly disclose further comprising: representing one or more quality metrics of tho third measurement of the first biometric parameter with a first value; and representing one or more quality metrics of the third measurement of the second biometric parameter with a second value, wherein weighting of the third measurement of the first biometric parameter is further based on the first value and weighting of the third measurement of the second biometric parameter is further based on the second value. However, Chan does disclose further comprising: representing one or more quality metrics of the third measurement of the first biometric parameter with a first value; and representing one or more quality metrics of the third measurement of the second biometric parameter with a second value, wherein weighting of the third measurement of the first biometric parameter is further based on the first value and weighting of the third measurement of the second biometric parameter is further based on the second value (para [0022]). It would have been obvious to one having ordinary skill in the art to add Chan's disclosure of further comprising: representing one or more quality metrics of the third measurement of the first biometric parameter with a first value; and representing one or more quality metrics of the third measurement of the second biometric parameter with a second value, wherein weighting of the third measurement of the first biometric parameter is further based on the first value and weighting of the third measurement of the second biometric parameter is further based on the second value to Rhoads' disclosure of the method of claim 32 wherein weighting of the third measurement of the first biometric parameter is further based on the first value and weighting of the third measurement of the second biometric parameter is further based on the second value to dynamically adjust the relative values involved in the comparing and the weighing of the measurements.

--continued in Supplemental Box--

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

International application No.

PCT/US 09/31638

Supplemental Box

In case **the space in any of the preceding boxes is not sufficient.**
Continuation of:
Box No. V.2 Citations and explanations:

Regarding claim 38, Rhoads discloses a method of authenticating a test subject as a user (col 19, ln 20-22), the method comprising: and providing a confidence level regarding whether the test subject is the user, wherein the confidence level is based on said comparing of the weighted combination of the template with the first and second sets of information (col 8, ln 59 to col 9, ln 7; col 23, ln 7-12, 34-38), a first biometric parameter (col 12, ln 53-57; col 64, ln 63-67) and information regarding a second biometric parameter (col 12, ln 53-57; col 64, ln 63-67), obtaining a first set of information from the test subject regarding the first biometric parameter (col 12, ln 53-57; col 64, ln 63-67); obtaining a second set of information from the test subject regarding the second biometric parameter (col 12, ln 53-57; col 64, ln 63-67); comparing the template with a weighted combination of the first set of information and the second set of information, wherein the weighting of the first set of information is based on the first score and the weighting of the second set of information is based on the second score (col 8, ln 59 to col 9, ln 7; col 23, ln 7-12, 34-38). However, Rhoads does not explicitly disclose associating a first score with the first set of information based on one or more quality metrics of the first set of information; associating a second score with the second set of information based on one or more quality metrics of the second set of information. However, Chan does disclose associating a first score with the first set of information based on one or more quality metrics of the first set of information (para [0022]); associating a second score with the second set of information based on one or more quality metrics of the second set of information (para [0022]). It would have been obvious to one having ordinary skill in the art to add Chan's disclosure of associating a first score with the first set of information based on one or more quality metrics of the first set of information; associating a second score with the second set of information based on one or more quality metrics of the second set of information to Rhoads' disclosure of a method of authenticating a test subject as a user, the method comprising: and providing a confidence level regarding whether the test subject is the user, wherein the confidence level is based on said comparing of the weighted combination of the template with the first and second sets of information, a first biometric parameter and information regarding a second biometric parameter, obtaining a first set of information from the test subject regarding the first biometric parameter; obtaining a second set of information from the test subject regarding the second biometric parameter, comparing the template with a weighted combination of the first set of information and the second set of information, wherein the weighting of the first set of information is based on the first score and the weighting of the second set of information is based on the second score to for example dynamically adjust the weighting combination to provide a more accurate authentication of a test subject.

Regarding claim 39, Rhoads and Chan teach the method of claim 38 as applied above. Rhoads further discloses further comprising updating the template based on the first and second sets of information if the confidence level is above a threshold value (col 40, ln 26-30).

Regarding claim 40, Rhoads and Chan teach the method of claim 38 as applied above. Rhoads further discloses further comprising: altering a first fusion parameter regarding the first biometric parameter based on at least one or more prior authentications of the user, and altering a second fusion parameter regarding the second biometric parameter based on at least one or more prior authentications of the user, wherein the weighting of the first set of information is further based on the first fusion parameter and the weighting of the second set of information is further based on the second fusion parameter (col 93, ln 22-43).

Regarding claim 41, Rhoads and Chan teach the method of claim 38 as applied above. Rhoads further discloses wherein the weighting of the first set of information is further based on the capacity of the first biometric parameter to uniquely identify an individual and the weighting of the second set of information is further based on the capacity of the second biometric parameter to uniquely identify an individual (col 58, ln 1-5).

Regarding claim 42, Rhoads and Chan teach the method of claim 38 as applied above. Rhoads further discloses wherein the first score is substantially different from the second score (col 11, ln 1-8) such that the confidence level is based more on the first set of information than on the second set of information (col 58, ln 1-5).

Regarding claim 43, Rhoads and Chan teach the method of claim 42 as applied above. Rhoads further discloses wherein the first score is sufficiently different from the second score (col 11, ln 1-8) such that the confidence level is based substantially entirely on the first set of information (col 58, ln 1-5).

Regarding claim 44, Rhoads and Chan teach the method of claim 38 as applied above. Rhoads further discloses wherein the one or more quality metrics of the first set of information and the one or more quality metrics of the second set of information are selected from the group consisting of the level of completeness of a set of information, the signal-to-noise ratio of a set of information, the presence of disqualifying features in a set of information, and the conformance of a set of information to an expected signature profile (col 8, ln 4).

Claims 1-50 have industrial applicability as defined by PCT Article 33(4) because the subject matter can be made or used in industry.